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FIT Clinical Decision Making

EARLY VENOARTERIAL EXTRACORPOREAL MEMBRANCE OXYGENATION FOR REFRACTORY SHOCK SECONARY TO AMLODIPINE OVERDOSE

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: FIT Clinical Decision Making: Heart Failure and Cardiomyopathies
Abstract Category: Heart Failure and Cardiomyopathies
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Authors: *Jialin Su, Rhode Island Hospital, Providence, RI, USA, Brown University, Providence, RI, USA*

Background: Amlodipine overdose can cause severe bradycardia, hypotension and heart failure which could be fatal despite medical therapies. Utilization of venoarterial extracorporeal membrane oxygenation (ECMO) should be considered for mechanical circulatory support if patient has refractory hypotension.

Case: A 17-year- old male presented to ER for being very lethargic. His medical history included diabetes, hypertension and depression. He took 20-25 tablets of 5mg Amlodipine besides Hydrochlorothiazide, Buspiron, Dexamfetamine, Lexapro, Venlafexine, Prozac and Clonazepam in unknown amounts. Physical examination in ER showed blood pressure (BP) of 50/30 mmHg, heart rate (HR) of 40 beats per minute (bpm). EKG showed complete heart block. Patient was intubated immediately and given normal saline bolus, Norepinephrine and Epinephrine drip. He was admitted to CCU for complete heart block and hypotension secondary to Amlodipine overdose.

Decision Making: Initially patient's BP and HR improved, but was still in second degree AV block. Temporary pacing wire was inserted and VVI pacing was started at 70 bpm. At the same time, patient was given activated charcoal, Calcium Gluconate, Glucogan, Intralipid and Insulin drip with Dextrose. Two hours later, his BP dropped again to 50/30 mmHg, which remained to be persistently hypotensive despite very high dose of Norepinephrine, Phenylephrine, Dopamine and pacing rate at 100 bpm. ECMO team was activated for mechanical support of refractory shock. Right femoral artery and vein were cannulated and excellent hemodynamic support was obtained without any complication at 12 hours after patient came to hospital. Vasopressors were titrated down then off within another 12 hours. Bedside Echo showed LVEF of 20%. Two days later, patient became hemodynamically stable off ECMO. He was extubated 4 days later. Repeated Echo one week later showed normal LVEF. He was discharged home one month later with normal mental status and functional independence.

Conclusion: Early utilization of ECMO provides excellent temporary hemodynamic support and bridges to recovery for patients who develope refractory shock secondary to Amlodipine overdose.